

Economic and Financial Evaluations Of Recycled Water Projects

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by

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Economic vs. Financial Analysis

Economic: Is a project worth doing?/which option is most beneficial?/who bears costs and enjoys benefits

Financial: Who will pay and how?

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How do we evaluate projects?

- Step 1. Identify Costs and Benefits
- Step 2. Measure and Value Costs and Benefits
- Step 3. Discount Costs and Benefits
- Step 4. Analyze Uncertainty (risk)

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IDENTIFYING COSTS & BENEFITS

Most pain and most fun

Begin with brainstorming session
– worry about *might*, not *will*.

Worry about measurement later

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***If it don't make the list,
It doesn't exist.***

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VALUING DIRECT COSTS

Costs of Building and Operating Facility

Project life/salvage value

Financing

Real or Current Dollars

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Are Current Dollars Real?

Current (nominal) dollars – what is on the check – value changes every year.

Constant (real) dollars – what it is worth – inflation taken out. Value fixed over time.

Present Value – a single number, not a stream of costs.

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VALUING DIRECT BENEFITS

These are usually avoided costs

- cheapest alternative option

Will include avoided operating costs – inc. treatment/distri.

May include avoided capital costs

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BRING IN OUTSIDERS

They know their costs – may be hard to obtain

Need regional “buy-in”

Physical boundaries matter more than political

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INDIRECT COSTS

Usually “softer costs” but should not be overlooked



- Loss of habitat
- Loss of tax revenue, other income.
- Public inconvenience

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INDIRECT BENEFITS

Also usually “softer”

- Benefits to Delta?
- Reduced wastewater costs?
- Improved water quality?

List and measure environmental and social costs

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WHAT'S A FISH WORTH?

$$\text{\$} + \text{fish} = ?$$

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INTEGRATING MONETARY AND NON-MONETARY VALUES

Find something similar to value.

Find out what others are paying.

Estimate break-even point.

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ALLOCATE BENEFITS AND COSTS

Examine multiple perspectives

What is Willingness to Pay?

Consumers

Water agencies

Wastewater agencies

Other agencies/wider region

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WHAT IS FINANCIAL BURDEN?

Construction bonds and operating income

- What are limitations?
- Who will be responsible?
- What is rate impact?
- What are risks?

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RISK ASSESSMENT

What could go wrong?

Might standards change?

water quality, environmental

Might options disappear?

transfers, groundwater banking, recycling, agriculture.

What is potential for outside funding?

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OVERALL

Look for “low-hanging fruit”

Look for maximum buy-in on planning process

Understand different perspectives

Include indirect benefits and costs

Look ahead at future regulations



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